

AMENDMENTS TO THE CLAIMS

1. **(Withdrawn)** A method for the manufacture of a noble metal catalyst for hydrocarbon conversion, **characterized** in that the method comprises the following steps:
  - a) Pre-treatment of a support comprising a zeolite selected from medium and large pore zeolites having acid sites, at a temperature between 423 – 1173 K, and optional modification of the support;
  - b) Deposition of a noble metal selected from platinum, palladium, ruthenium, rhodium, iridium and mixtures and combinations thereof by gas phase deposition technique comprising vaporisation of the noble metal precursor selected from  $\beta$ -diketonates and metallocenes and reaction with the support, and
  - c) Heat treatment at oxidising or reducing conditions.
2. **(Withdrawn)** The method according to claim 1, **characterized** in that the noble metal is platinum.
3. **(Withdrawn)** The method according to claim 1 or 2, **characterized** in that the zeolite is selected from large pore zeolites having weak or medium strength of acid sites.

4. **(Withdrawn)** The method according to claim 1, characterized in that the zeolite is selected from mesoporous aluminosilicates, crystalline aluminosilicates, crystalline aluminophosphates and crystalline aluminosilicophosphates.
5. **(Withdrawn)** The method according to claim 1, characterized in that the zeolite is selected from MCM-41, Y- and beta-zeolites, mordenites, AlPO-5 and AlPO-11, SAPO-5 and SAPO-11.
6. **(Withdrawn)** The method according to claim 1, **characterized** in that the support further comprises inorganic oxide, carbon related material or mixtures or combinations thereof.
7. **(Withdrawn)** The method according to claim 6, **characterized** in that the inorganic oxide is selected from silicon oxide, aluminum oxide, titanium oxide, zirconium oxide, tungsten oxide and magnesium oxide, preferably from silicon oxide and aluminum oxide.
8. **(Withdrawn)** The method according to claim 6, **characterized** in that the carbon related material is selected from activated carbon, graphite and carbon nanotubes.
9. **(Withdrawn)** The method according to claim 1, **characterized** in that the noble metal precursor is  $(\text{CH}_3)_3(\text{CH}_3\text{C}_5\text{H}_4)\text{Pt}$ .

10. **(Withdrawn)** The method according to claim 1, **characterized** in that the zeolite is MCM-41.
11. **(Withdrawn)** The method according to claim 1, **characterized** in that in the first process step a) the support is pre-treated at a temperature of 423–1173 K, and in the second step b) the deposition is carried out in the presence of an inert carrier gas.
12. **(Withdrawn)** The method according to claim 11, **characterized** in that the inert carrier gas is nitrogen, helium, argon or methane.
13. **(Withdrawn)** The method according to claim 1, **characterized** in that the modification in the first step a) is carried out by blocking part of available surface sites on the support with a blocking agent selected from alcohols, acetyl acetone, 2,2,6,6-tetramethyl-3,5-heptanedione, precursors of silicon oxide, aluminum oxide, titanium oxide, zirconium oxide, tungsten oxide and magnesium oxide, and nitrates.
14. **(Withdrawn)** The method according to claim 13, **characterized** in that the blocking agent is silicon tetrachloride, tetramethoxysilane, tetraethoxysilane, hexamethyldisilazane, hexamethyldi-siloxane, aluminum chloride, aluminum ethoxide, aluminum (III) acetylacetonate, tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)aluminum, trimethyl aluminum, triethyl alumi-num, titanium tetrachloride, titanium isopropoxide,

zirconium tetrachloride, tungsten oxy-chloride, tungsten hexachloride or tris(2,2,6,6-tetramethyl-3,5-heptanedionato) magnesium.

15. **(Previously Presented)** A method for converting hydrocarbons comprising adding a noble metal catalyst to a hydrocarbon composition to affect a ring-opening, isomerisation, alkylation, hydrocarbon reforming, dry reforming, hydrogenation and dehydrogenation reaction, wherein said noble metal catalyst is manufactured by a method comprising the following steps:

- a) Pre-treatment of a support comprising a zeolite selected from medium and large pore zeolites having acid sites, at a temperature between 423 – 1173 K, and optional modification of the support;
- b) Deposition of a noble metal selected from platinum, palladium, ruthenium, rhodium, iridium and mixtures and combinations thereof by gas phase deposition technique comprising vaporisation of the noble metal precursor selected from  $\beta$ -diketonates and metallocenes and reaction with the support, and
- c) Heat treatment at oxidising or reducing conditions.

16. **(Previously Presented)** A process for the manufacture of middle distillate diesel fuel, **characterized** in that a middle distillate feedstock is transferred to a reactor wherein it is

allowed to react at a temperature of 283 - 673 K and under a pressure of 10 – 200 bar with hydrogen in the presence of a noble metal catalyst to accomplish opening of naphthenes with two and multiple rings to produce isoparaffins, n-paraffins and mononaphthenes in the middle distillate region, wherein said noble metal catalyst is manufactured by a method comprising the following steps:

- a) Pre-treatment of a support comprising a zeolite selected from medium and large pore zeolites having acid sites, at a temperature between 423 – 1173 K, and optional modification of the support;
- b) Deposition of a noble metal selected from platinum, palladium, ruthenium, rhodium, iridium and mixtures and combinations thereof by gas phase deposition technique comprising vaporisation of the noble metal precursor selected from  $\beta$ -diketonates and metallocenes and reaction with the support, and
- c) Heat treatment at oxidising or reducing conditions.

17. **(Previously Presented)** The method according to claim 15, wherein said ring-opening reaction is ring-opening of naphthenic molecules.

18. **(NEW)** The method according to claim 15, wherein the noble metal is platinum.

19. **(NEW)** The method according to claim 15, wherein the zeolite is selected from large pore zeolites having weak or medium strength of acid sites.

20. (NEW) The method according to claim 15, wherein the zeolite is selected from mesoporous aluminosilicates, crystalline aluminosilicates, crystalline aluminophosphates and crystalline aluminosilicophosphates.
21. (NEW) The method according to claim 15, wherein the zeolite is selected from MCM-41, Y- and beta-zeolites, mordenites, AlPO-5 and AlPO-11, SAPO-5 and SAPO-11.
22. (NEW) The method according to claim 15, wherein the support further comprises inorganic oxide, carbon related material or mixtures or combinations thereof.
23. (NEW) The method according to claim 22, wherein the inorganic oxide is selected from silicon oxide, aluminum oxide, titanium oxide, zirconium oxide, tungsten oxide and magnesium oxide, preferably from silicon oxide and aluminum oxide.
24. (NEW) The method according to claim 22, wherein the carbon related material is selected from activated carbon, graphite and carbon nanotubes.
25. (NEW) The method according to claim 15, wherein the noble metal precursor is  $(\text{CH}_3)_3(\text{CH}_3\text{C}_5\text{H}_4)\text{Pt}$ .
26. (NEW) The method according to claim 15, wherein the zeolite is MCM-41.

27. (NEW) The method according to claim 15, wherein in the first process step a) the support is pre-treated at a temperature of 423–1173 K, and in the second step b) the deposition is carried out in the presence of an inert carrier gas.
28. (NEW) The method according to claim 27, wherein the inert carrier gas is nitrogen, helium, argon or methane.
29. (NEW) The method according to claim 15, wherein the modification in the first step a) is carried out by blocking part of available surface sites on the support with a blocking agent selected from alcohols, acetyl acetone, 2,2,6,6-tetramethyl-3,5-heptanedione, precursors of silicon oxide, aluminum oxide, titanium oxide, zirconium oxide, tungsten oxide and magnesium oxide, and nitrates.
30. (NEW) The method according to claim 29, wherein the blocking agent is silicon tetrachloride, tetramethoxysilane, tetraethoxysilane, hexamethyldisilazane, hexamethyldisiloxane, aluminum chloride, aluminum ethoxide, aluminum (III) acetylacetonate, tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)aluminum, trimethyl aluminum, triethyl aluminum, titanium tetrachloride, titanium isopropoxide, zirconium tetrachloride, tungsten oxy-chloride, tungsten hexachloride or tris(2,2,6,6-tetramethyl-3,5-heptanedionato) magnesium.
31. (NEW) The method according to claim 16, wherein the noble metal is platinum.



32. (NEW) The method according to claim 16, wherein the zeolite is selected from large pore zeolites having weak or medium strength of acid sites.
33. (NEW) The method according to claim 16, wherein the zeolite is selected from mesoporous aluminosilicates, crystalline aluminosilicates, crystalline aluminophosphates and crystalline aluminosilicophosphates.
34. (NEW) The method according to claim 16, wherein the zeolite is selected from MCM-41, Y- and beta-zeolites, mordenites, AlPO-5 and AlPO-11, SAPO-5 and SAPO-11.
35. (NEW) The method according to claim 16, wherein the support further comprises inorganic oxide, carbon related material or mixtures or combinations thereof.
36. (NEW) The method according to claim 35, wherein the inorganic oxide is selected from silicon oxide, aluminum oxide, titanium oxide, zirconium oxide, tungsten oxide and magnesium oxide, preferably from silicon oxide and aluminum oxide.
37. (NEW) The method according to claim 35, wherein the carbon related material is selected from activated carbon, graphite and carbon nanotubes.
38. (NEW) The method according to claim 16, wherein the noble metal precursor is  $(\text{CH}_3)_3(\text{CH}_3\text{C}_5\text{H}_4)\text{Pt}$ .



39. (NEW) The method according to claim 16, wherein the zeolite is MCM-41.
40. (NEW) The method according to claim 16, wherein in the first process step a) the support is pre-treated at a temperature of 423–1173 K, and in the second step b) the deposition is carried out in the presence of an inert carrier gas.
41. (NEW) The method according to claim 40, wherein the inert carrier gas is nitrogen, helium, argon or methane.
42. (NEW) The method according to claim 15, wherein the modification in the first step a) is carried out by blocking part of available surface sites on the support with a blocking agent selected from alcohols, acetyl acetone, 2,2,6,6-tetramethyl-3,5-heptanedione, precursors of silicon oxide, aluminum oxide, titanium oxide, zirconium oxide, tungsten oxide and magnesium oxide, and nitrates.
43. (NEW) The method according to claim 42, wherein the blocking agent is silicon tetrachloride, tetramethoxysilane, tetraethoxysilane, hexamethyldisilazane, hexamethyldisiloxane, aluminum chloride, aluminum ethoxide, aluminum (III) acetylacetonate, tris(2,2,6,6,-tetramethyl-3,5-heptanedionato)aluminum, trimethyl aluminum, triethyl aluminum, titanium tetrachloride, titanium isopropoxide, zirconium tetrachloride, tungsten oxy-chloride, tungsten hexachloride or tris(2,2,6,6-tetramethyl-3,5-heptanedionato) magnesium.